

CLAIMS

- 1 1. An apparatus for transmitting a file, comprising:
 - 2 a file splitter that splits the file into a plurality of
 - 3 message segments, each message segment including an
 - 4 address of the destination; and
 - 5 a file encapsulator that encapsulates at least one of the
 - 6 plurality of message segments to conceal the address of
 - 7 the destination during transmission of at least one
 - 8 encapsulated message segment to one or more trusted
 - 9 nodes for retransmission by the one or more trusted
 - 10 nodes toward the destination for reassembly of the file
 - 11 at the destination.
- 1 2. The apparatus of claim 1 wherein the file splitter
 - 2 comprises a file converter that converts the file into N
 - 3 message segments that enable reassembly of the file from
 - 4 a subset of any M of the message segments, where N and M
 - 5 are positive integers, and $N > M \geq 1$.
- 1 3. The apparatus of claim 1 wherein a single processor
 - 2 includes the file splitter and the file encapsulator.
- 1 4. The apparatus of claim 1 further comprising a file
 - 2 encoder that encodes the file prior to splitting of the
 - 3 file by the file splitter.
- 1 5. A method of secure transmission of a file from a source
 - 2 to a destination, comprising the steps of:
 - 3 splitting the file into a plurality of message segments,
 - 4 each message segment including an address of the
 - 5 destination;
 - 6 encapsulating at least one of the plurality of message
 - 7 segments to conceal the address of the destination;
 - 8 transmitting at least one encapsulated message segment to

one or more trusted nodes; and
causing retransmission of the at least one of the
plurality of message segments from the one or more
trusted nodes toward the destination for reassembly of
the file at the destination.

6. The method claim 5 wherein the step of splitting the file
comprises the step of converting the file into N message
segments that enable reassembly of the file from a subset
of any M of the message segments, where N and M are
positive integers, and $N > M \geq 1$.

7. The method of claim 6 wherein the step of causing
retransmission comprises causing splitting of the at
least one message segment into N_2 message segments that
enable reassembly of the at least one message segment
from a subset of any M_2 of the N_2 message segments, where
 N_2 and M_2 are positive integers and $N_2 > M_2 \geq 1$; and
causing transmission of at least M_2 of the N_2 message
segments toward the destination for reassembly of the at
least one message segment prior to reassembly of the
file.

8. The method of claim 6 wherein the step of causing
retransmission comprises the step of transmitting at
least M of the N message segments to the destination for
reassembly of the file after at least M of the N message
segments arrive at the destination.

9. The method of claim 5 wherein the step of transmitting
comprises the step of transmitting more than one message
segment via multiple pathways of a communications
network.

10. The method of claim 5 further comprising the step of
encoding the file prior to transmission.

1 11. The method of claim 10 wherein the step of encoding the
2 file comprises the step of enciphering the file.

1 12. The method of claim 5 wherein the step of encapsulating
2 at least one of the plurality of message segments
3 comprises the step of enciphering the at least one of the
4 plurality of message segments.

1 13. The method of claim 5 wherein the step of encapsulating
2 at least one of the plurality of message segments
3 comprises the step of adding forwarding instructions to
4 at least one of the plurality of message segments to
5 instruct a receiving one of the plurality of trusted
6 nodes to forward at least one of the plurality of message
7 segments toward the destination.

1 14. The method of claim 5 wherein the step of encapsulating
2 at least one of the plurality of message segments
3 comprises the step of addressing each one of the
4 plurality of message segments to one of the plurality of
5 trusted nodes.

1 15. The method of claim 5 wherein the step of causing
2 retransmission comprises causing splitting of the at
3 least one of the plurality of message segments into a
4 second plurality of message segments including an address
5 of the destination; and causing transmission of the
6 second plurality of message segments toward the
7 destination.

1 16. The method of claim 15 further comprising the steps of
2 causing reassembly of the at least one message segment;
3 and causing transmission of the at least one reassembled
4 message segment toward the receiver.